

FIG. 1

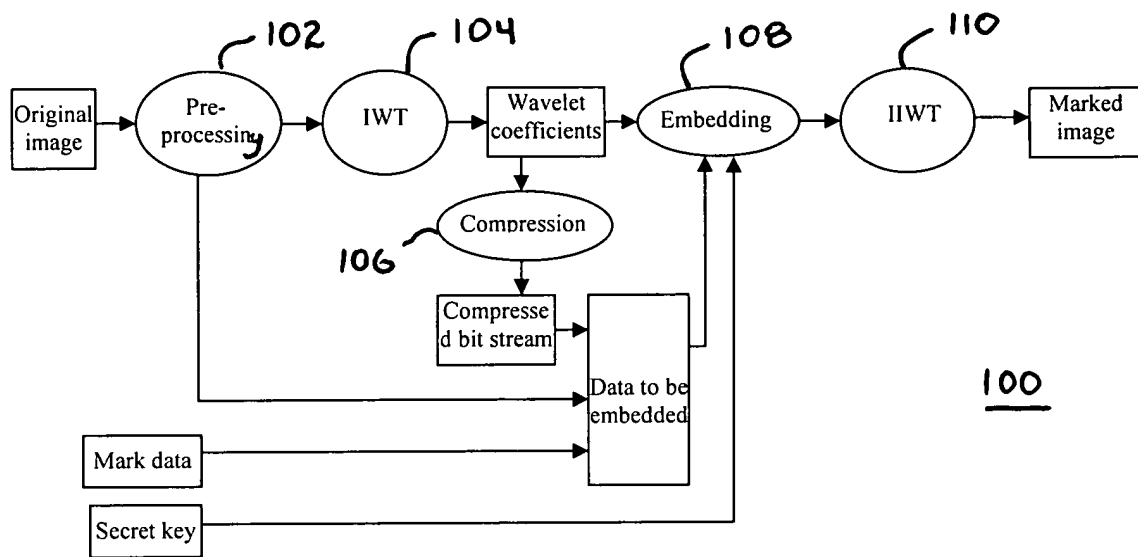


FIG. 2

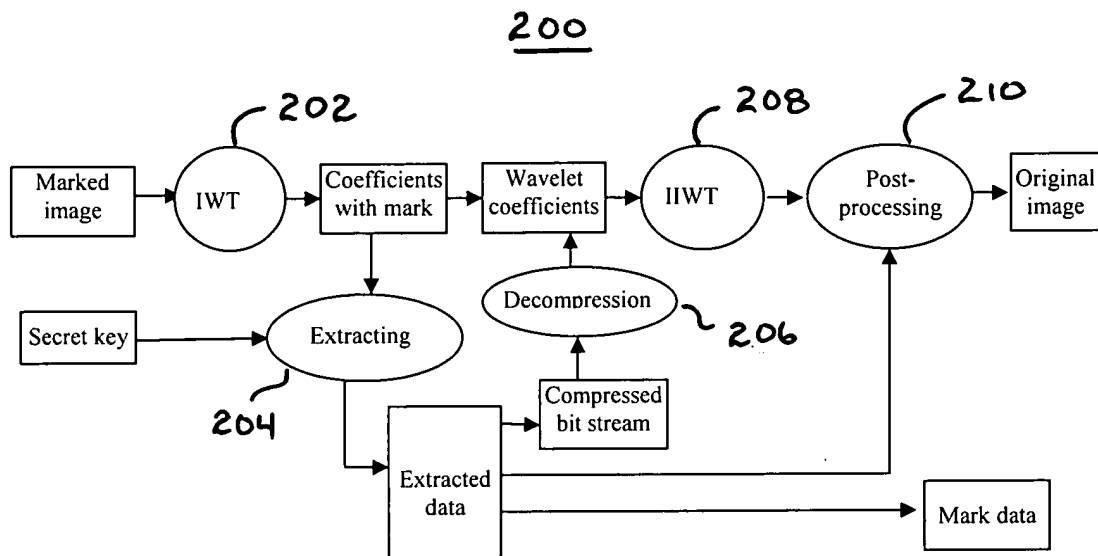


FIG. 3

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FIG. 4



FIG. 5



FIG. 6

Images (512x512x8)	PSNR of marked image (dB)	Pay-load (bits)
Lena	36.64	85,507
Pepper	29.11	69,285
Tiffany	28.91	89,848
Couple	29.83	84,879
Baboon	32.76	14,916
Airplane	36.30	93,981
Sailboat	35.47	44,086
House	36.01	77,726

FIG. 7

Methods	The amount of data embedded in a $512 \times 512 \times 8$ image
Macq's	Upper bound: 2,046 bits
Goljan's	3,000-24,000 bits
Our proposed	15,000-94,000 bits

FIG. 8

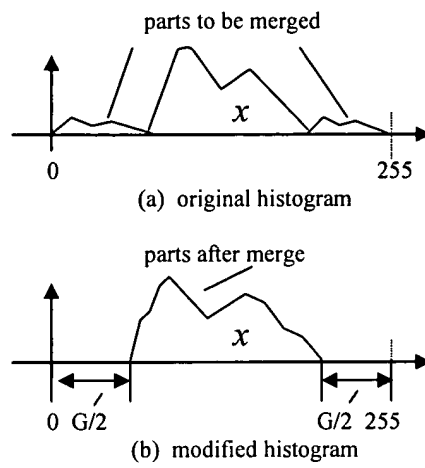


FIG. 9

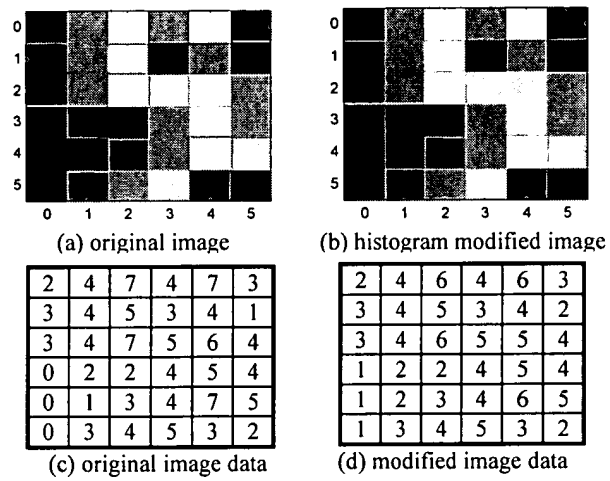


FIG. 10

Histogram data before and after modification.

Gray value	0	1	2	3	4	5	6	7
No. before modification	3	2	4	7	10	5	1	4
No. in modification	3	0	6	7	10	6	0	4
No. after modification	0	3	6	7	10	6	4	0

FIG. 11

Bookkeeping information.

For image ($6 \times 6 \times 3$), the histogram is narrowed down 1 gray scale for both sides. $G=2$, $G/2=1$. The total bits length is 37 bits.

 S =the total book-keeping bit length 37 bits (00100101) +
compressed number of gray scale 2 (010) +
the first histogram from left hand side gray scale "1" (001)
+record length 6 (0110) + scan sequence (101101)+
the first histogram from right hand side gray scale "6"
(110) + record length 6 (0110) + scan sequence (110111)

 $S=[00100101 \ 010 \ 001 \ 0110 \ 101101 \ 110 \ 0110 \ 110111]$

FIG. 12